4-Port SATA 150 PCI Combo Host Card w/RAID

User Manual

Model: UGT-ST320R

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Features

- Silicon Image SiI3512 SATA controller chip
- Compliant with PCI Specification, Rev. 2.3
- Compliant with Serial ATA 1.0 specification
- Provides two independent channels to support up to two Serial ATA drives
- Supports RAID0(striping) and RAID1(mirroring) for speed and data protection respectively
- HDDs function normally when not in RAID sets
- Supports SATA up to 150MB/Sec
- Supports Windows® 2000/XP/2003/Vista/7 (32/64 bit)

Connectors

- 2 x internal SATA connectors
- 2 x external eSATA connectors

System Requirements

- Pentium-class computer with one available PCI slot
- Windows® 2000/XP/2003/Vista/7 (32/64 bit)

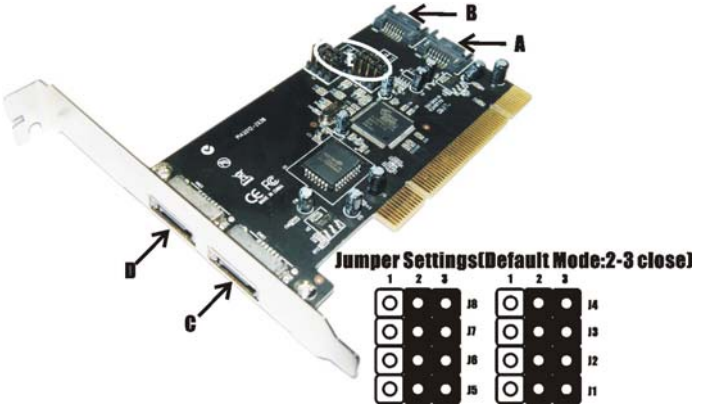
Package Contents

- Vantec 4-Port SATA 150 PCI Combo Host Card w/RAID x 1
- SATA Cables x 2
- Installation Guide x 1
- Driver CD x 1

  *User's Manual Is on Driver CD

Hardware Description

Note: There are four SATA ports in SATA 150 PCI RAID Card 2-Channel. We name these ports from A to D. Ports A & B are internal SATA ports. Ports C & D are external SATA ports. Changing the jumper setting allows you to select between external and internal ports to use. By default, Port A and B are working.



E (Jumper Settings)

JP	Description	Active Port
J1-J4	1-2 close	Enable SATA Port C
	2-3 close	Enable SATA Port A
J5-J8	1-2 close	Enable SATA Port D
	2-3 close	Enable SATA Port B

Hardware Installation

1. Turn off the power to your computer and any other connected peripheral devices.
2. Unplug the power cord form the back of the computer.
3. Remove your computer's cover.
4. Remove the slot bracket from an available PCI slot.
5. To install the card, carefully align the card's bus connector with the selected PCI slot on the motherboard. Push the board down firmly, but gently, until it is well seated.
6. Replace the slot bracket's holding screw to secure the card.

Device Connection

The Vantec **4-Port SATA 150 PCI Combo Host Card w/RAID** is a two channel Serial ATA controller that supports up to two Serial ATA hard disk drives. It is recommended to use identical hard drives for all RAID configurations.

1. Install your hard disk drive(s) in chassis.
2. Connect the Serial ATA hard disk drive to the system power supply using the included Serial ATA power cable.
3. Connect one end of the Serial ATA cable to the hard disk drive.

4. Attach the other end of the Serial ATA cable to the Serial ATA port on the SATA 150 PCI Raid Card 2-Channel
5. Follow the same instructions to connect up to two hard drives. Device connection is now complete.
6. Replace the computer cover and reconnect the power cord.

RAID Arrays

RAID Arrays are setup in the Vantec **4-Port SATA 150 PCI Combo Host Card w/RAID**'s BIOS.

RAID 0 (Striping)

This RAID array to be used on **New/Blank** hard drives. Striping will destroy existing data on the hard drive. **Auto Configuration** is recommended. For applications that require custom chunk size, **Manual Configuration** is offered.

Auto configuration (recommended)

The default chunk size is **64k** when selecting **Auto configuration**.

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.

2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **Striped**, then press **Enter**.
4. Select **Auto configuration**, then press **Enter**.
5. When asked **Are You Sure (Y/N)?**, press **Y** to accept.
6. Press **Ctrl+E** to exit the BIOS.
7. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.
8. Continue with FDISK and FORMAT steps as if you were installing a conventional hard drive.

Manual configuration

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **Striped**, then press **Enter**.
4. Select **Manual configuration** then press **Enter**
5. Select the **first drive**, press **Enter**.
6. Select the **second drive**, press **Enter**.
7. Select chunk size from **4k**, **8k**, **16k**, **32k**, **64k** or **128k**, then press **Enter**.

8. When asked **Are You Sure(Y/N)?**, press **Y** to accept.
9. Press **Ctrl+E** to exit the BIOS.
10. When asked **Are you sure to exit(Y/N)?**, press **Y** to exit and reboot.
11. Continue with FDISK and FORMAT steps as if you were installing a conventional hard drive.

RAID 1 (Mirror)

For New/Blank Hard Drives

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. At the next screen select **Mirrored** then press **Enter**.
4. Select **Auto configuration**, then press **Enter**.
5. When asked **Are You Sure(Y/N)?**, press **Y** to accept.
6. Press **Ctrl+E** to exit the BIOS.
7. When asked **Are you sure to exit(Y/N)?**, press **Y** to exit and reboot.
8. Continue with FDISK and FORMAT steps as if you were installing a conventional hard drive.

For Existing Hard Drives with Data

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. At the next screen select **Mirrored** then press **Enter**.
4. Select **Manual configuration**, then press **Enter**.
5. Select the **Source** drive, press **Enter**.
6. Select the **Target** drive, press **Enter**.
7. Enable **Disk Copy**, select **Yes**, then press **Enter**.

Note: Enable Disk Copy – Copy current content of source driver to mirror drive; Disable Disk Copy – RAID 1 set formed must be repartitioned and reformatted to guarantee the consistency in their contents.

8. Press **Ctrl+E** to exit the BIOS.
9. When asked **Are you sure to exit(Y/N)?**, press **Y** to exit and reboot.

Note: If during boot the RAID BIOS reports an **RAID1 set is in Rebuild status, The rebuild will continue after boot sequence is complete**, disregard the message, continue booting, and let the Mirror rebuild.

Rebuilding a Failed Mirror Set

When a failure to one member occurs, you will be notified either by the **RAID BIOS** during boot or by the **SATARAID GUI** while in Windows. The steps below will guide you in rebuilding a failed mirror set.

1. Replace the failed drive with one of equal or greater capacity, then start the computer.
2. During boot press **Ctrl+S** or **F4** to enter the RAID BIOS.
3. Select **Rebuild Mirrored Set** then press **Enter**.
4. Select the desired set and then press **Enter**.
5. When asked **Are You Sure(Y/N)?**, press **Y** to confirm.
6. The set will be rebuilt.

Deleting RAID Arrays

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.
2. Select **Delete RAID Set**, then press **Enter**.
3. Select the RAID set then press **Enter**.
4. When asked **Are You Sure(Y/N)?**, press **Y** to confirm.

Resolving Conflicts

When a RAID set is created, then metadata written to the disk includes drive connection information. If, after a disk failure, the replacement disk was previously part of a RAID set (or used in another system), it may have conflicting metadata. If so, this will prohibit the RAID set from being either created or rebuilt, in order for the RAID set to function properly, this old metadata must be first overwritten with the new metadata. To resolve this, from the main BIOS window select **Resolve Conflicts**, then press **Enter**, the correct metadata, including the correct drive connection information, will be written to the replacement disk.

Low Level Format

Low Level Format is build into the RAID BIOS to make it more convenient to erase the entire contents of a hard disk drive, including data, drive and partition information. The Low Level Format utility works on single hard drive only, before the RAID set is configured.

BIOS Configuration

The Serial ATA 2-Channel RAID adapter BIOS will appear every time

your system starts up. If the BIOS doesn't show, please try your controller in another PCI slot. During this (POST) process, the BIOS will show up and indicate the devices attached to it.

Driver Installation

For Windows® 2000

For New Installation

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the "**UGT-ST320R\XP_2003_Vista_2008 32-bit**" folder, found on the driver CD, onto a blank floppy disk then follow the directions below.*

1. Setup the RAID Array prior to Windows installation.
2. Follow Windows® 2000 installation procedure.
3. At the Windows® 2000 Setup screen, press **F6** to install the RAID driver.
4. When prompted, press **S** to specify the location of the driver.
5. Insert the floppy disk, then press **Enter**.
6. Select **Silicon Image SiI 3x12 SATARaid Controller for Windows 2000**, then press **Enter**.
7. Press **Enter** again to finish driver installation, then follow the

on-screen instructions to complete the Windows installation.

For An Existing Installation

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At **Found New Hardware Wizard**, click **Next**.
3. Select **Search for a suitable driver for my device (recommend)** then click **Next**.
4. Insert the driver CD, check **CD-ROM drives**, uncheck the other boxes, click **Next**, then click **Next** again.
5. Click Finish.

For Windows® XP/Server 2003

For New Installation

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the "**UGT-ST320R\XP_2003_Vista_2008 32-bit**" folder, found on the driver CD, onto a blank floppy disk then follow the directions below.*

1. Setup the RAID Array prior to Windows installation.
2. Follow Microsoft's Windows installation procedure.

3. At the Windows Setup screen, press **F6** to install the RAID driver.
4. When prompted, press **S** to specify the location of the driver.
5. Insert the floppy disk, then press **Enter**.
6. Select **Silicon Image SiI 3x12 SATARaid Controller for Windows XP/Server 2003/Vista**, then press **Enter**.
7. Press **Enter** to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

For An Existing Installation

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware** Wizard, select No, not this time, then click **Next.**
3. Insert the driver CD, select **Install the software automatically (Recommended)**, and click **Next**.
4. Click **Finish**
5. Restart Windows to complete the installation.

For Windows®XP-x64/Server 2003-x64

For New Installation

A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the UGT-ST320R\XP_2003_Vista_2008 64-bit" folder, found on the driver CD, onto a blank floppy disk then follow the directions below.

1. Setup the RAID Array prior to Windows installation.
2. Follow Microsoft's Windows installation procedure.
3. At the Windows Setup screen, press **F6** to install the RAID driver.
4. When prompted, press **S** to specify the location of the driver.
5. Inset the floppy disk, then press **Enter**.
6. Select **Silicon Image SiI 3x12 SATARaid Controller (64-bit Extended)** or **Silicon Image SiI 3x12 SATARaid Controller (Itanium)**, then press **Enter**.
7. Press **Enter** to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

For An Existing Installation

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware** Wizard, select No, not this time,

then click **Next.**

3. Insert the driver CD, select **Install the software automatically (Recommended)**, and click **Next**.
4. Click **Finish**
5. Restart Windows to complete the installation.

For Windows® 7

For New Installation

1. Setup the RAID Array prior to Windows installation.
2. At the Windows Setup screen, press **Load Driver** to install the driver.
3. Insert the CD driver into your CD-ROM Drive, please select **Silicon Image SiI 3512 SATARaid Controller** (**D:\UGT-ST320R\Win7 32-bit**), then press **Next.** (Change **D:** to match your CD-ROM drive letter)
4. Follow the on-screen instructions to complete the installation.

For An Existing Installation

1. Click **Start →Control Panel**. When the Control Panel Window appears, click the **System and Security** Link, and then click

Device Manager.

2. When the Device Manager window appears, click on the next to other device to expacnd the list. Right-click"**RAID Controller**" and select **Updated Driver Software**…
3. When the Update Driver Software appears, select "Browse my computer for driver software"
4. When the next window appears, insert the driver CD into the computer's optical drive, type D:\ UGT-ST420R\Win7 32-bit (substitute whatever drive letter is appopriate), and then **click Next.**
5. When the next window appears, click Close to complete the installation.

For Windows® 7-x64

For New Installation

1. Setup the RAID Array prior to Windows installation.
2. At the Windows Setup screen, press **Load Driver** to install the driver.
3. Insert the CD driver into your CD-ROM Drive, please select **Silicon Image SiI 3512 SATARaid Controller**

(**D:\UGT-ST320R\Win7 64-bit**), then press **Next.** (Change **D:** to match your CD-ROM drive letter)

4. Follow the on-screen instructions to complete the installation.

For An Existing Installation

1. Click **Start →Control Panel**. When the Control Panel Window appears, click the **System and Security** Link, and then click **Device Manager.**
2. When the Device Manager window appears, click on the next to other device to expacnd the list. Right-click"**RAID Controller**" and select **Updated Driver Software**…
3. When the Update Driver Software appears, select "Browse my computer for driver software"
4. When the next window appears, insert the driver CD into the computer's optical drive, type D:\ UGT-ST420R\Win7 32-bit (substitute whatever drive letter is appopriate), and then **click Next.**
5. When the next window appears, click Close to complete the installation.

To Verify Driver Installation

1. Right click **My Computer** and click **Manage**.
2. Select **Device Manager**.
3. Look for the following:

   Windows® *2000/XP_2003_Vista_2008*: Double click **SCSI and RAID Controller:**

   -Silicon Image SiI 3512 SATARaid Controller should be displayed

   Windows® Vista/7: Double click **Storage controllers:**

   -Silicon Image SiI 3512 SATARaid Controller should be displayed

SATARAID Management Software Installation

1. Please insert the CD driver bound with SATA 150 PCI RAID card into your CD-ROM Drive.
2. At the Windows desktop click **Start**, then **Run**.
3. Type **D:\UGT-ST320R\SATARAID Tool\setup.exe**,then click **OK**. (Change **D:** to match your CD-ROM drive letter)
4. Follow the on-screen instructions to complete the installation.

Warranty

The Vantec **4-Port SATA 150 PCI Combo Host Card w/RAID** comes with a 1 year limited warranty(90 day parts). If your unit becomes defective within that time frame, please go to www.vantecusa.com for information on how to receive warranty exchange or repair. Cosmetic defects and missing parts are not covered under this warranty. Please check the contents of the unit to make sure you received all parts. Also, check for any cosmetic flaws. If any parts are missing or if there are cosmetic defects, please contact the retailer from which you purchased the unit immediately and ask for a replacement.

Vantec Thermal Technologies

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